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I HEREBY CERTIFY that annexed hereto is a true copy of documents filed in connection with the following patent application:

Application No.	S980597
Date of Filing	21 July 1998
Applicant	ALLTRACEL PHARMACEUTICALS PLC, an Irish company of 87 Quinns Road, Shankill, County Dublin, Ireland.

Dated this 7 day of December, 2000.

An officer authorised by the
Controller of Patents, Designs and Trademarks.

FORM NO. 1

S980597

REQUEST FOR THE GRANT OF A PATENT

PATENTS ACT, 1992

The Applicant(s) named herein hereby request(s)

_____ the grant of a patent under Part II of the Act

__X__ the grant of a short-term patent under Part III of the Act

on the basis of the information furnished hereunder.

1. Applicant(s)

Name Alltracel Pharmaceuticals PLC

Address 87 Quinns Road
Shankill
County Dublin
Ireland

Description/Nationality

An Irish company

2. Title of Invention

"A method"

3. Declaration of Priority on basis of previously filed application(s) for same invention (Sections 25 & 26)

Previous filing date	Country in or for which filed	Filing No.

4. Identification of Inventor(s)
Name(s) of person(s) believed
by Applicants(s) to be the inventor(s)

Name: Ivan Santar, a citizen of the Czech Republic
Address: Travniky 1006, CZ-6602 Predklasteri, Czech Republic.

Name: Frantisek Kiss, a citizen of the Czech Republic
Address: Bednarova 20a, CZ-61900 Brno, Czech Republic.

Name: Jiri Briestensky, a citizen of the Czech Republic
Address: Skolska 413, CZ-50343 Cernilov, Czech Republic.

S980597

5. Statement of right to be granted a patent (Section 17(2) (b)

The Applicant derives the rights to the invention by virtue of Agreements dated December 23, 1996 and December 30, 1996.

6. Items accompanying this Request – tick as appropriate

(i) __X__ prescribed filing fee (£50.00)

(ii) ____ specification containing a description and claims

__X__ specification containing a description only

____ Drawings referred to in description or claims

(iii) ____ An abstract

(iv) ____ Copy of previous application (s) whose priority is claimed

(v) ____ Translation of previous application whose priority is claimed

(vi) __X__ Authorisation of Agent (this may be given at 8 below if this Request is signed by the Applicant (s)

7. Divisional Application (s)

The following information is applicable to the present application which is made under Section 24 –

Earlier Application No: .....

Filing Date: .....

8. Agent

The following is authorised to act as agent in all proceedings connected with the obtaining of a patent to which this request relates and in relation to any patent granted -

Name	Address
John A. O'Brien & Associates	The address recorded for the time being in the Register of Patent Agents, and currently Third Floor, Duncairn House, 14 Carysfort Avenue, Blackrock, Co. Dublin, Ireland.

9. Address for Service (if different from that at 8)

As above

Signed _____ JOHN A. O'BRIEN & ASSOCIATES

Date July 21, 1998

"A Method"

Introduction

The invention relates to polyanhydroglucuronic acids and salts thereof. The term polyanhydroglucuronic acid and salts thereof as used herein includes copolymers thereof, especially with anhydroglucose.

Co-pending patent application PCT IE98/00003 describes a haemostatically active aerosol composition of polyanhydroglucuronic acid and/or acceptable salts thereof.

Co-pending patent application PCT IE98/00004 describes particular polyanhydroglucuronic acids and salts thereof and a method of preparing such compounds.

In particular therefore, the term polyanhydroglucuronic acids and salts thereof includes the acids and salts referred to in our co-pending applications mentioned above.

This invention especially relates to the processing of powder/particle forms of polyanhydroglucuronic acid and salts thereof.

Statements of Invention

According to the invention there is provided a process for treating powder/particle forms of polyanhdroglucuronic acid and salts thereof by treating a colloidal solution of the material to form microspheres.

Most preferably, the polyanhydroglucuronic acids and salts thereof are those described in co-pending PCT IE98/00004.

The colloidal solution may be dropped into a water-miscible organic liquid, a solution of electrolytes or a mixture of both in order to form the microspheres.

The invention also provides microspheres of polyanhydroglucuronic acid and salts thereof.

The invention further provides compositions/formulations incorporating such microspheres.

Colloid solutions of the material may also be treated to produce rigid or flexible foams. The treatment may be by a lyophilisation method. The foams may be used by themselves or as a component of other formulations, especially for wound dressings.

Detailed Description

Polyanhydrogluronic acid and salts thereof, particularly as described in co-pending Application PCT IE98/00004 in a powder/particle form are mixed with a suitable solvent, especially water, to form a colloidal solution. The colloidal solution thus formed is dropped into a water-miscible organic liquid, a solution of suitable electrolytes, or a mixture thereof. The size of the microspheres thus formed is controlled by adjusting the drop size, the concentration of the colloid solution, and/or the liquid used. To adjust size and porosity of the microspheres, suitable adjuvants such as tensides may also be included in the system in some cases.

We have found that the polyanhydroglucuronic acid and salts thereof made by the oxidative hydrolysis treatment described in PCT IE98/00004 has cross linkages due to the formation of inter- and intra- molecular esters or ethers. This leads to a

larger molecular mass and a resultant modification of the viscoelastic properties of the colloidal solution which promotes the formation of microspheres.

The microspheres retain the haemostatic effect of the material and may be particularly used in applications such as in a multi-layer haemostatic and/or absorbent pads and dressings. Alternatively such microspheres may be used for embolisation of larger arteries, for example in kidney treatments. The microspheres may also be used as at least part of a filter medium or filler, for example as fillers for chromatographic columns, especially those used for peptide separation.

Rigid or flexible foams may be produced by forming a colloid solution of polyanhydroglucuronic acid and salts thereof and applying conventional lyophilisation methods to the colloid solution. The rigid or flexible foams may be used by themselves or as components of dressing materials for control of bleeding in wound care, while displaying immunomodulative properties in supporting and/or accelerating the healing process. They can also be used as carriers of active substances such as antibiotics, antiviral, antiinflammatory and cytostatic drugs.

The invention is not limited to the embodiments hereinbefore described which may be varied in detail.